

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): A communication system ~~according to claim 1,~~
~~further~~ comprising:

a communication terminal device configured to transmit data to a mobile terminal
through a plurality of base stations,

a plurality of switching devices included in communication paths between the
communication terminal device and the plurality of base stations,

wherein each switching device is configured to transmit packet data in a multicast
manner to a plurality of devices connected to the switching device;

a first determiner, configured to determine a transmission time for each switching
device to transmit packet data resulting in simultaneous data reception at the mobile terminal,

wherein the determination is based on a time period necessary for transmission of the
packet data from one or more of the plurality of switching devices to one or more base
stations connected to each switching device and to one or more secondary switching devices
at a mobile terminal side; and

a first transmitter, configured to transmit the packet data from each switching device
to the plurality of devices connected to the switching device, based on the transmission
timing determined by the first determiner;

a first generator ~~which generates~~ configured to generate a plurality of radio slot data, based on transmission target packet data ~~that is,~~

wherein said transmission target packet data includes packet data transmitted to a first switching device that is the closest switching device to the communication terminal device among the plurality of switching devices in the communication paths, and based on the number of devices that are destinations of multicast transmission by the first switching device;

a second generator ~~which generates~~ configured to generate packet data ~~containing~~ including radio slot data generated by the first generator; and

a second transmitter ~~which, in the first switching device, transmits~~ configured to transmit each of the packet data generated by the second generator to a plurality of devices connected to the first switching device, based on transmission timing determined by the first determiner and associated with the first switching device;

~~a third generator which generates a plurality of packet data containing radio slot data, based on each of the packet data transmitted to a second switching device that is each of one or more switching devices other than the first switching device among the plurality of switching devices, and based on the number of devices that are destinations of multicast transmission by the second switching device; and~~

~~a third transmitter which, in the second switching device, transmits each of the packet data generated by the third generator to a plurality of devices connected to the second switching device, based on transmission timing determined by the first determiner and associated with the second switching device;~~

~~wherein, when each of the plurality of base stations transmits radio slot data contained in each of the packet data to the mobile terminal, the mobile terminal generates the~~

~~transmission target packet data, based on the radio slot data transmitted from each of the plurality of base stations.~~

Claim 3 (Currently Amended): A communication system ~~according to claim 1,~~
~~further~~ comprising:

a communication terminal device configured to transmit data to a mobile terminal through a plurality of base stations,

a plurality of switching devices included in communication paths between the communication terminal device and the plurality of base stations,

wherein each switching device is configured to transmit packet data in a multicast manner to a plurality of devices connected to the switching device;

a first determiner, configured to determine a transmission time for each switching device to transmit packet data resulting in simultaneous data reception at the mobile terminal,

wherein the determination is based on a time period necessary for transmission of the packet data from one or more of the plurality of switching devices to one or more base stations connected to each switching device and to one or more secondary switching devices at a mobile terminal side; and

a first transmitter, configured to transmit the packet data from each switching device to the plurality of devices connected to the switching device, based on the transmission timing determined by the first determiner;

~~a second determiner which, based on each transmission timing determined by the first determiner, determines~~ configured to determine reception timing indicating timing at which,
wherein each of the plurality of base stations ~~receives the packet data, and reception timing indicating timing at which~~ each of one or more ~~[[of]]~~ second switching devices ~~that are other switching devices than a first switching device that is the closest switching device to the~~

~~communication terminal device among the plurality of switching devices in the communication paths receives the packet data simultaneously so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations;~~

a difference information generator configured to generate information including ~~which, if there is a difference between at least one timing, among timing at which each of the plurality of base stations received the packet data, [[and]] timing at which each of the one or more of the second switching devices received the packet data, and the reception timing determined by the second determiner corresponding to the one timing, generates difference information indicating the difference;~~ and

a second transmitter ~~which, in a predetermined switching device, on acquisition of the difference information from a predetermined device, transmits~~ configured to transmit packet data to the predetermined device at ~~predetermined transmission timing for the predetermined device to receive the packet data at reception timing which is determined by~~ based on the difference information and the second determiner.

Claim 4 (Currently Amended): A communication system according to claim 3, further comprising:

a third transmitter ~~which, if the second transmitter cannot transmit the packet data to the predetermined device at the predetermined transmission timing, transmits~~ configured to transmit transmission impossibility information ~~to this effect~~ to a terminal side switching device that is a switching device connected to the predetermined switching device at the communication terminal device side if the second transmitter cannot transmit the packet data to the predetermined device at the predetermined transmission timing; and

a fourth transmitter ~~which, in the terminal side switching device, transmits~~ configured to transmit packet data to the predetermined switching device ~~at transmission timing for the second transmitter to transmit packet data to the predetermined device~~ at the predetermined transmission timing, based on the transmission impossibility information.

Claims 5 and 6 (Canceled).

Claim 7 (Currently Amended): A multicast switching device ~~which transmits~~ configured to transmit packet data to a plurality of devices in a multicast manner when a communication terminal device transmits data to a mobile terminal through a plurality of base stations, comprising:

a first determiner, configured to determine a transmission time for the switching device to transmit packet data resulting in simultaneous data reception at the mobile terminal, wherein the determination is based on a time period necessary for multicast transmission of the packet data from one or more of the plurality of switching devices to one or more base stations connected to each switching device and to one or more secondary switching devices at a mobile terminal side;

a first generator configured to generate a plurality of radio slot data, based on transmission target packet data,

wherein said transmission target packet data includes packet data transmitted to a first switching device that is the closest switching device to the communication terminal device among the plurality of switching devices in the communication paths, and based on the number of devices that are destinations of multicast transmission by the first switching device;

a first transmitter ~~which transmits,~~ configured to transmit each of the transmission timings determined by the first determiner to the switching device corresponding to the transmission timing; and

a second transmitter ~~which transmits,~~ configured to transmit the packet data to a plurality of devices that are destinations of multicast transmission, based on the transmission timing that is determined by the first determiner ~~and associated with the multicast switching device.~~

Claim 8 (Original): A multicast switching device which transmits packet data to a plurality of devices in a multicast manner when a communication terminal device transmits data to a mobile terminal through a plurality of base stations and which is a switching device closest to the communication terminal device among a plurality of switching devices that are included in communication paths between the mobile terminal and the communication terminal device and execute the multicast transmission, comprising:

a first determiner which, based on a time period necessary for transmission of the packet data to the plurality of base stations from each of one or more of the plurality of switching devices that is included in communication paths between the communication terminal device and the plurality of base stations and executes multicast transmission of the packet data, and based on a time period necessary for transmission of the packet data from each of one or more of the plurality of switching devices to one or more switching devices connected to the switching device at mobile terminal side, determines, for each switching device, transmission timing at which each switching device transmits the packet data to a plurality of devices connected to the switching device so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations;

a first transmitter which transmits each of the transmission timings determined by the first determiner to the switching device corresponding to the transmission timing;

a first generator which generates a plurality of radio slot data, based on transmission target packet data that is packet data transmitted from the communication terminal device, and based on the number of devices that are destinations of multicast transmission of the packet data;

a second generator which generates packet data containing radio slot data generated by the first generator; and

a second transmitter which transmits each of the packet data generated by the second generator to a plurality of devices that are destinations of multicast transmission, based on the transmission timing that is determined by the first determiner and associated with the multicast switching device.

Claim 9 (Original): A multicast switching device according to claim 8, further comprising:

a second determiner which, based on each transmission timing determined by the first determiner, determines reception timing indicating timing at which each of the plurality of base stations receives the packet data and reception timing indicating timing at which each of one or more of low-order multicast transmission devices that are other switching devices than the switching device closest to the communication terminal device among the plurality of switching devices in the communication paths receives the packet data, so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations;

an acquisition unit configured to acquire transmission impossibility information indicating that a predetermined low-order multicast switching device cannot transmit packet data to a predetermined device at predetermined transmission timing for the predetermined

device to receive the packet data at the reception timing which is determined by the second determiner, if there is a difference between at least one timing, among timing at which each of the plurality of base stations received the packet data and timing at which each of one or more of low-order multicast switching devices received the packet data, and the reception timing determined by the second determiner, corresponding to the one timing, and when the predetermined low-order multicast switching device acquires difference information from the predetermined device after the difference information indicating the difference is generated; and

a third transmitter which, based on the transmission impossibility information, transmits packet data to the predetermined low-order multicast switching device at transmission timing for the predetermined low-order multicast switching device to transmit the packet data to the predetermined device at the predetermined transmission timing.

Claim 10 (Original): A multicast switching device which transmits packet data to a plurality of devices in a multicast manner when a communication terminal device transmits data to a mobile terminal through a plurality of base stations and which is a switching device other than a switching device closest to the communication terminal device among a plurality of switching devices that are included in communication paths between the mobile terminal and the communication terminal device and execute the multicast transmission, comprising:

a first acquisition unit configured to acquire transmission timing of the packet data from a device which determines, for each of the plurality of switching devices, transmission timing at which each of the switching devices transmits the packet data to a plurality of devices connected to the switching device so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations;

a second acquisition unit configured to acquire generated packet data when the switching device closest to the communication terminal device generates, based on transmission target packet data which is packet data transmitted from the communication terminal device and based on the number of devices which are destinations of multicast transmission by the switching device closest to the communication terminal device, a plurality of radio slot data and packet data containing the generated radio slot data;

a generator which generates a plurality of packet data containing radio slot data, based on the packet data acquired by the second acquisition unit and based on the number of devices that are destinations of multicast transmission; and

a first transmitter which transmits each of the packet data generated by the generator to a plurality of devices that are destinations of multicast transmission, based on the transmission timing acquired by the first acquisition unit.

Claim 11 (Original): A multicast switching device according to claim 10, further comprising:

a third acquisition unit configured to acquire reception timing associated with the multicast switching device when the reception timing is determined so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations, the reception timing indicating timing at which each of one or more of the low-order multicast switching devices, other than the switching device closest to the communication terminal device among the plurality of switching devices in the communication paths, receives the packet data;

a difference information generator which, if there is a difference between timing at which the packet data was received and the reception timing acquired by the third acquisition unit, generates difference information indicating the difference;

a second transmitter which transmits the difference information to a switching device executing multicast transmission that is connected to the multicast switching device at communication terminal device side;

a fourth acquisition unit configured to acquire, when a predetermined device acquires reception timing after the reception timing indicating timing at which the predetermined device receives the packet data is determined so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations, difference information indicating a difference between timing at which the predetermined device received the packet data and the reception timing;

a third transmitter which, based on the difference information acquired by the fourth acquisition unit, transmits the packet data to the predetermined device at predetermined transmission timing for the predetermined device to receive the packet data at the reception timing; and

a fourth transmitter which, if the third transmitter cannot transmit the packet data to the predetermined device at the predetermined transmission timing, transmits transmission impossibility information to the switching device executing multicast transmission that is connected to the multicast switching device at the communication terminal device side.

Claims 12 and 13 (Canceled).

Claim 14 (Currently Amended): A communication method ~~in which, when~~ wherein a communication terminal device transmits data to a mobile terminal through a plurality of base stations, comprising:

a plurality of switching devices transmitting packet data in a multicast manner to a

~~each of~~ a plurality of switching devices included in communication paths between the communication terminal device and the plurality of base stations ~~transmits~~ transmitting packet data in a multicast manner to a plurality of devices connected to the switching device; ~~comprising:~~

a first determiner, configured to determine a transmission time for each switching device to transmit packet data resulting in simultaneous data reception at the mobile terminal,

wherein the determination is based on a time period necessary for transmission of the packet data from one or more of the plurality of switching devices to one or more base stations connected to each switching device and to one or more secondary switching devices at a mobile terminal side; and

determining[[,]] a transmission time for each switching device, ~~transmission timing indicating timing at which the switching device transmits the~~ to transmit packet data to a plurality of devices connected to the switching device, ~~based on a time period necessary for transmission of the packet data from each of one or more of the plurality of switching devices to one or more base stations connected to the switching device and based on a time period necessary for transmission of the packet data from each of one or more of the plurality of switching devices to one or more switching devices connected to the switching device~~ resulting in simultaneous data reception at the mobile terminal side, ~~so that data reception timings at the mobile terminal become simultaneous among the plurality of base stations; and~~

~~in each of the switching devices; transmitting the packet data to the plurality of devices connected to the switching device, based on the transmission timing determined by the determining step; and~~

generating a plurality of radio slot data, based on transmission target packet data,
wherein said transmission target packet data includes packet data transmitted to a first switching device that is the closest switching device to the communication terminal device

among the plurality of switching devices in the communication paths, and based on the number of devices that are destinations of multicast transmission by the first switching device.

Claim 15 (Canceled).

Claim 16 (New): The communication system according to claim 2, further comprising a third generator configured to generate packet data containing radio slot data;

Claim 17 (New): The communication system according to claim 2, further comprising a third transmitter configured to transmit the packet data generated by the third generator to a plurality of devices connected to the second switching device, based on transmission timing determined by the first determiner and associated with the second switching device.

Claim 18 (New): The communication system according to claim 2, wherein, each of the plurality of base stations transmits radio slot data contained in the packet data to the mobile terminal, and the mobile terminal generates the transmission target packet data, based on the radio slot data transmitted from each of the plurality of base stations.